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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,629	12/30/2003	Elizabeth L. Walker	ESCI-106US	7514

23122 7590 10/19/2006

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EXAMINER	
ZHENG, LOIS L	

ART UNIT	PAPER NUMBER
1742	

DATE MAILED: 10/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/748,629	WALKER ET AL.	
	Examiner	Art Unit	
	Lois Zheng	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) *8-10* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Invention Group I, claims 1-7, in the reply filed on 31 July 2006 is acknowledged.

2. Claims 8-10 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Invention Group II, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 31 July 2006.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 5 recites the limitation "said devices" in line 4. There is insufficient antecedent basis for this limitation in the claim. It is unclear whether "said devices" are referring to microelectronic devices or copper objects.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-3 and 5-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Lapluye et al. US 5,156,892(Lapluye).

Lapluye teaches applying a corrosion inhibiting solution to metal surfaces to form a protective coating(col. 1 lines 6-9 and col. 1 line 64 – col. 2 line 6). To test the effectiveness of the protective coating, Lapluye further teaches exposing treated and untreated metal surfaces to an atmosphere containing hydrogen sulfide and observe for metal surface color change(col. 3 lines 15-17). According to Lapluye, the treated copper plate starts to change color after 132 minutes(col. 3 lines 21-23).

Regarding instant claims 1-3 and 5-6, the application of corrosion inhibiting solution to a metal surface such as a copper plate as taught by Lapluye reads on the claimed step of subjecting copper surface to a cleaning solution containing a corrosion inhibitor. The testing step of exposing treated copper surface to hydrogen sulfide containing atmosphere as taught by Lapluye reads on the claimed step of exposing the copper surface to a reactant that will attack the copper surface to cause a color change. Lapluye teaches the claimed gaseous reactant is hydrogen sulfide and the copper plate as taught by Lapluye reads on the claimed copper surface or copper coupon or test piece. Lapluye also teaches the claimed color change after exposure to hydrogen sulfide gas, which is a sign of sulfur attacking of copper surface due to lack of corrosion inhibitor on the copper surface.

The preamble "for detecting the presence of a residual amount of corrosion inhibitor on a copper surface" merely states the intended use of the instant invention

and does not contain any process limitations that affects the patentability of the instant invention.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lapluye in view of Tadashi et al. JP 59-083913(Tadashi).

The teachings of Lapluye are discussed in paragraph 7 above. However, Lapluye does not teach how the hydrogen sulfide gas is formed.

Tadashi teaches a tool for generating hydrogen sulfide(title). Tadashi further teaches that its hydrogen sulfide generator reacts acetic acid with sodium sulfide to produce hydrogen sulfide(abstract). In addition, Tadashi does not appear to have a temperature requirement for the reaction between acetic acid and sodium sulfide to occur.

Therefore, it would have been obvious to one of ordinary skill in the art to have incorporated the hydrogen sulfide generator of Tadashi into the process of Lapluye in order to provide sufficient hydrogen sulfide gas to the process of Lapluye to achieve proper corrosion inhibitor testing.

Regarding claims 4-7, Lapluye in view of Tadashi teaches the claimed reaction of acetic acid and sodium sulfide to form hydrogen sulfide gas. In addition, since Tadashi

does not have specific temperature requirement for the reaction between acetic acid and sodium sulfide, the examiner concludes, based on the broadest reasonable interpretation, that the reaction of acetic acid and sodium sulfide as taught by Lapluye in view of Tadashi may occur at room temperature as claimed. Furthermore, even though Laptuye in view of Tadashi do not explicitly teach the claimed sodium sulfide in deionized water, one of ordinary skill in the art would have found the claimed sodium sulfide in deionized water obvious since it is deionized water is a popular solvent used in chemical reactions due to high quality of the water and the absence of impurities.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sawa et al. US 3,933,531(Sawa) teaches applying a corrosion inhibiting solution to a copper surface to form a protective coating. Sawa further teaches testing the corrosion resistance of the coating by exposing the coated copper surface to hydrogen sulfide, sulfur dioxide and sulfur gaseous atmosphere to observe color changes on the copper surface.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lois Zheng whose telephone number is (571) 272-1248. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LLZ

ROY KING
SUPERVISORY PATENT EXAMINER
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